

### **REMARKS**

Claims 24, 26, and 28-32 are pending. Claim 24 is amended. The amendments to claim 24 and the subject matter of new claim 36 find support throughout the specification and at least at page 16, lines 16-18, and page 31, lines 5-7 and 28-29. No new matter is added.

### **Rejection of Claims 24, 26, and 28-32 Under 35 U.S.C. §103(a)**

#### *Kullberg et al.*

The Office Action rejected claims 24, 26, and 28-32 under 35 U.S.C. §103 as being unpatentable over Kullberg et al. (J. Immunology, 1992, 148:3264). The Office Action asserts that Kullberg et al. teach that the helminthic parasite *Schistosoma mansoni* down regulates the Th1 cytokine secretion of IL-2 and IFN- $\gamma$  in mice, and that Th1 responses were determined by cytokine profiles as measured by in vitro ELISA assays. The Office Action states that Kullberg et al. differ from the claimed invention in that they do not teach steps of fractionating, sub-fractionating and testing of the sub-fractions. The Office Action asserts that, since methods of fractionation and sub-fractionation are well known and routine, one of skill in the art would have been motivated to use such methods to identify the component of the parasite composition responsible for downregulation of Th1 cytokine secretion as taught by Kullberg et al. The Office Action asserts that one of skill in the art would have been motivated to identify the components in order to produce a "pure" composition capable of reducing a Th1 response without possible negative effects caused by the other constituents of the nematode composition. Applicants respectfully disagree and traverse the rejection.

With respect to the statement in the Office Action that "Kullberg et al. differs from the instant invention in that they don't disclose the method steps of fractionating, sub-fractionating and testing of the sub-fractions," the deficiencies in the teachings of Kullberg et al. extend far beyond that assertion. In fact, Kullberg et al. differs from the claimed invention in that Kullberg et al. does not teach the step of seeking the active component of a helminthic parasite preparation by ANY method.

The Office Action states that the motivation to modify the teachings of Kullberg et al. arise from the desire to reduce “a Th1 response without the possible negative effects of [sic] caused by the other constituents of the nematode composition, yet the Office Action does not support this assertion with a description of the “negative effects” sought to be avoided, or a description of why one of skill in the art would have been concerned with such “negative effects” given the teachings of Kullberg et al. Indeed, Kullberg et al. does not teach the administration of a helminthic parasite preparation as a therapeutic agent for decreasing a Th1 immune response; a decreased Th1 response is not taught by Kullberg as having a therapeutic effect. Thus, one of skill in the art would not have been concerned with any alleged “negative effects” based on the teachings of Kullberg et al. because Kullberg et al. does not relate to the therapeutic use of a helminthic parasite preparation, and certainly does not teach or suggest identifying the active component of a helminthic parasite preparation.

Notwithstanding the foregoing, and without acquiescing to the rejection, Applicants have amended the instant claims to recite additional elements to further distinguish the claimed invention from the teachings of Kullberg et al. without prejudice to pursuing claims of a different scope in this or one or more continuing applications. The claims have been amended to require that the helminthic parasite preparation is free of human bacterial, mycobacterial and viral pathogens. Support for this limitation can be found in the specification at page 16, lines 16-18. In addition, new claim 36 has been added which requires that, prior to the step of assaying for a Th1 immune response the fractions are combined with a compound such as myelin basic protein (MBP), PLP139-151, a superantigen, a mitogen, phorbol ester, or a signal transduction analog. Support for this amendment can be found in the specification on page 31, lines 5-7 and 28-29.

It is well settled that in order to reach a finding of obviousness, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Kullberg et al. do not teach or suggest a method of identifying a component of a helminthic parasite preparation where the helminthic parasite preparation is free of human bacterial,

mycobacterial, and viral pathogens. In addition, Kullberg et al. does not teach that the helminthic parasite preparation is fractionated and combined with a compound selected MBP, PLP139-151, a superantigen, a mitogen, phorbol ester, or a signal transduction analog prior to assaying for a Th1 immune response. Indeed, Kullberg et al. does not teach or even suggest the step of assaying for an active component of a helminthic parasite preparation and, thus, cannot teach or suggest the step of combining a fraction of the preparation with one of the recited components prior to assaying for Th1 activity. In addition, there is no teaching in Kullberg et al. or in the general knowledge and skill in the art that would suggest to one of skill in the art to modify the teachings of Kullberg et al. to arrive at the currently amended claims.

Kullberg et al., even if modified as suggested by the Office Action, does not teach or suggest each element of the amended claims, and thus, does not render the instant claims obvious. Accordingly, Applicants request that the rejection be reconsidered and withdrawn.

*Lee et al.*

The Office Action also rejected claims 24, 26, and 28-32 as unpatentable over Lee et al. (WO 96/29802). The Office Action asserts that Lee et al. teach the down regulation of Th1 activity in mice can be accomplished by administration of a soluble helminthic nematode extract. The Office Action states that Lee et al. do not teach the steps of fractionation, sub-fractionation, and sub-fraction testing. The Office Action asserts that, since methods of fractionation and sub-fractionation are well known and routine, one of skill in the art would have been motivated to use such methods to identify the component of the parasite composition responsible for downregulation of Th1 cytokine secretion as taught by Lee et al. The Office Action asserts that one of skill in the art would have been motivated to identify the components in order to produce a "pure" composition capable of reducing a Th1 response without possible negative effects caused by the other constituents of the nematode composition. Applicants respectfully disagree.

Regardless of whether the technique of fractionating and sub-fractionating a helminthic parasite preparation were well known at the time of the instant invention, one of skill in the art, based on the disclosure of Lee et al. would not have been motivated to screen a helminthic parasite preparation in search of a component that reduces a Th1 immune response.

Applicants previously noted (in the RCE filed April 19, 2007) that the teachings of Lee et al. would teach away from the modification suggested by the Office Action. It is well settled that a reference may be said to teach away “when a person or ordinary skill, upon reading the reference would... be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551 (Fed. Cir. 1994). It is also well established that “a reference will teach away if it suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant.” *Id.* Applicants previously pointed out that the data shown in Table 1 of Lee et al. teaches that allograft survival was diminished following extract administration relative to live worm infection. Thus, one of skill in the art would interpret such results as suggesting that further purification of a helminthic parasite preparation would be unlikely to produce the result sought by the instant claims. The current Office Action, however, simply dismisses this teaching and states that one of skill in the art would nonetheless be motivated to identify an active component to obtain a pure parasite preparation, but does not provide any rationale to rebut Applicants assertion that Lee et al. teaches away from the invention. Thus, Applicants maintain that the teachings of Lee et al. teach away from the instant claims.

Notwithstanding the foregoing, and without acquiescing to the rejection, Applicants have amended the instant claims to recite additional elements to further distinguish the claimed invention from the teachings of Lee et al. without prejudice to pursuing claims of a different scope in this or one or more continuing applications. The claims have been amended to require that the helminthic parasite preparation is free of human bacterial, mycobacterial and viral pathogens. Support for this limitation can be found in the specification at page 16, lines 16-18. In addition, new claim 36 requires that, prior to the step of assaying for a Th1 immune response the fractions are

combined with a compound such as MBP, PLP139-151, a superantigen, a mitogen, phorbol ester, or a signal transduction analog. Support for this amendment can be found in the specification on page 31, lines 5-7 and 28-29.

It is well settled that in order to reach a finding of obviousness, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Lee et al. do not teach or suggest a method of identifying a component of a helminthic parasite preparation where the helminthic parasite preparation is free of human bacterial, mycobacterial, and viral pathogens. In addition, Lee et al. does not teach that the helminthic parasite preparation is fractionated and combined with a compound selected from MBP, PLP139-151, a superantigen, a mitogen, phorbol ester, or a signal transduction analog prior to assaying for a Th1 immune response. Indeed, Lee et al. does not teach or even suggest the step of assaying for an active component of a helminthic parasite preparation and, thus, cannot teach or suggest the step of combining a fraction of the preparation with one of the recited components prior to assaying for Th1 activity. In addition, there is no teaching in Lee et al. or in the general knowledge and skill in the art that would suggest to one of skill in the art to modify the teachings of Lee et al. to arrive at the currently amended claims.

Lee et al., even if modified as suggested by the Office Action, does not teach or suggest each element of the amended claims, and thus, does not render the instant claims obvious. Accordingly, Applicants request that the rejection be reconsidered and withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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